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## ABSTRACT

The focus of this paper is on the relative contribution of participating in a first-year seminar to student satisfaction and the retention of students in the second year at a Research I, urban, and public university. The study compared the measured satisfaction levels of students enrolled in a first-year seminar with students who were not enrolled in such seminars. The relationship between participation in a first-year seminar and retention was investigated by using a logistic regression model to determine if seminar participation increased the probability of gender, ethnicity, and academic potential as measured by high school rank. Overall, the first-year to second-year retention rate for all new freshmen at the study institution was 83.1% for students who began in fall 1998. The study used survey data from a random sample of undergraduates ( $n=1,600$ ) surveyed in the spring of 1999 as well as survey data from first-year students who had enrolled in a first-year seminar sometime during the 1998-1999 academic year. Results of t-tests between the two groups of students indicate statistically significant differences at  $p<0.05$  for 15 of the 92 items on the Student Experiences Survey. For all but one of the items, the more positive responses came from students enrolled in a first-year seminar. Results of the logistic regression analysis indicate that only high school rank was a significant contributor to the logistic regression equation predicting retention into the second year. The model correctly classified 82.2% of the cases in the sample. The log odds ratios, which indicate the strength of the effect of variables in the mode, for the variables in the model were 2.158 and 1.565 respectively, for the two upper quartile high school rank categories. (Contains 5 tables and 13 references.) (Author/SLD)

**The Relative Contribution of Participating  
in a First-year Seminar  
on Student Satisfaction and Retention into the Sophomore Year**

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**Abstract**

The initiation of the Annual First-Year Experience Conference in 1981 marked the beginning of focused interest in the quality of the first-year experience of students in colleges and universities in the United States. Among the most common initiatives has been the development of a first-year seminar for new students. The focus of this paper is on the relative contribution of participating in a first-year seminar on student satisfaction and retention of students into the second year at a Research I, urban, and public university. The study compares the measured satisfaction levels of students enrolled in a first-year seminar with a sample of students who were not enrolled in such seminars. The relationship between participation in a first-year seminar and retention was investigated by using a logistic regression model (e.g., Xiao & House, 2000) to determine if seminar participation increased the probability of retention beyond that achieved by using the typical demographic variables of gender, ethnicity, and academic potential as measured by high school rank. Overall, the first-year to second-year retention rate for all new freshman at the study institution was 83.1 percent for students who began fall 1998. This study used survey data from a random sample of undergraduate students ( $N=1,600$ ) surveyed in the spring of 1999 as well as survey data from first-year students who had enrolled in a first-year seminar sometime during the 1998-99 academic year. Results of t-tests between the two groups of students indicated statistically significant differences at  $p \leq .05$  for 15 of the 92 items on the Student Experiences Survey. For all but one of the items, the more positive responses came from students enrolled in a first-year seminar. Results of the logistic regression analysis indicated that only the high school rank variable was a significant contributor in the logistic regression equation predicting retention into the second year. The model correctly classified 88.2 percent of the cases in the sample. The log odds ratios, which indicate the strength of the effect of the variables in the model, for the variables in the model were 2.158 and 1.565, respectively, for the two upper quartile high school rank categories.

## The Relative Contribution of Participating in a First-year Seminar on Student Satisfaction and Retention into the Sophomore Year

The initiation of the Annual First-Year Experience Conference in 1981 marked the beginning of focused interest in the quality of the first-year experience of students in colleges and universities in the United States. Subsequently, the National Resource Center for the First-Year Experience and Students in Transition at the University of South Carolina has served to focus the development of resources (e.g., Gardner & Jewler, 2000) to improve the first-year experience. Since that time, numerous initiatives have occurred to address various concerns about the first-year experience. Recently, the Higher Education Research Institute (HERI) developed a specific survey focused on the experiences of first-year students.

Among the most common initiatives has been the development of a first-year seminar for new students, although there is considerable variation across institutions relative to the particular nature of first-year seminars (Barefoot, Warnock, Dickinson, Richardson, & Roberts, 1998). Although not explicitly stated as the primary purpose for initiating a first-year seminar, one of the expectations has been that participating in a first-year seminar would increase the probability that a student would return for the second year. Nationally, issues concerning retention and graduation rates have taken on increased prominence in the last decade, but there is limited empirical research on the effect of a first-year seminar on retention rates. Statistics on institutional retention rates are featured in the *U.S. News & World Reports* annual publication *America's Best Colleges*. In recent years, many institutions have implemented surveys of first year students, and some research suggests that overall satisfaction levels of first-year students are related to retention into the second year (e.g., Hendel & Tomsic, 2000).

During the past three decades, the focus of research on retention and graduation rates has shifted from predictions based on individual characters such as gender, ability, and ethnicity, to those institutional characteristics and experiences that are correlated with the probability of being retained (Astin, 1975; Tinto, 1987; Kuh, 1995; Braxton & Sullivan, 1997). Although there is a long history of research that correlates certain institutional experiences with retention rates, only recently has research focused on the effects of particular types of courses such as first-year seminars (Fidler & Moore, 1996; Volkwein & Cabrera, 1998). Parents and state officials have positive views about the initiation of first-year seminars, so such initiatives have public relations value separate from their actual contribution to improved retention rates. The concerns about the first-year experience are especially salient at large research institutions, where typically first-year students have limited contact with regular faculty members.

One of the many challenges in studying the effects of first-year seminars is that several quite different types of courses carry the same label of first-year seminar. Seminars vary in both purpose and content: academic content only; a focus on student life and success strategies; and a blend of both academic content and student success strategies. One of the problems in evaluating the impact of freshman seminars is to

distinguish amongst seminars types in the growing literature on effects of initiatives directed at first-year students. A second problem is that the traditional measures of high school and admission test scores are poor predictors of college persistence and graduation (Murphy, 2000).

The focus of this paper is on the relative contribution of participating in a first-year seminar on student satisfaction and retention of students into the second year at a Research I, urban, and public university. The First-Year Seminars were first offered on a pilot basis in 1997-98, and were more widely available during the 1998-99 academic year. During 1998-99, approximately 40 seminars were offered, and although the purpose and content varied somewhat, the seminars were focused primarily on academic content. The study compares the measured satisfaction levels of students enrolled in a first-year seminar with a sample of students who were not enrolled in such seminars. The relationship between participation in a first-year seminar and retention was investigated by using a logistic regression model (e.g., Xiao & House, 2000) to determine if seminar participation increased the probability of retention beyond that achieved by using the typical demographic variables of gender, ethnicity, and academic potential as measured by high school rank. First-year college of enrollment also was used as a predictor in the regression model.

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### Method

This study was based on a sample of the new first-year students who began fall term 1998, the last year before the study institution changed from a quarter to a semester calendar effective fall 1999. The study included two components: a) a comparison between first-year seminar participants and a random sample of non-participants on responses to an extensive student experiences and student satisfaction survey administered at the end of their first year; and b) the use of a logistic regression model which included seminar participation as one of the variables, in the prediction of retention into the second year for the 1,733 students for whom survey data were available. Table 1 describes the demographic and educational characteristics of the fall 1998 entering cohort of new first-year students at the study institution.

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Insert Table 1 about here

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Overall, the first-year to second-year retention rate for all new freshmen at the study institution was 83.1 percent for students who began fall 1998. Table 2 contains the total number of new freshmen and the freshman-to-sophomore retention rates for the past five years. The increases in retention rates can be accounted for by both increasing ability levels of the students admitted to the institution along with institutional efforts to improve the quality of the undergraduate experience, especially the experience of first-year students. For those 5,086 students who began fall 1998, enrollments in first-year seminars

totaled 723 or approximately 14 percent of the new freshmen at the study institution. Three types of seminars were offered (i.e., academic content seminars ( $N=387$  students), seminars with a developmental focus ( $N=184$  students), and seminars associated with living in residential college ( $N=152$  students)) The current study did not distinguish among the three types of seminars relative to students' evaluations of their first year at the study institution and the effects on retention into the second year.

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Insert Table 2 about here

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This study used survey data from a random sample of undergraduate students ( $N=1,600$ ) surveyed in the spring of 1999 as well as survey data from first-year students who had enrolled in a first-year seminar sometime during the 1998-99 academic year. In addition to the random sample of students, several undergraduate colleges surveyed approximately half of their enrolled students to be able to discern year-in-school differences as well as differences in evaluations as a function of major. Although it would have been possible to include those first-year students included in the over-sampling process in comparing evaluation of seminar participants and non-participants, their inclusion would have introduced unknown bias into the comparisons between seminar participants and non-participants. The study also used retention data for the 1,733 students in the entering cohort of fall 1998 freshman survey respondents for the subsequent fall term of 1999. All students who were first-year seminar participants were sent a copy of the survey. The Student Experiences Survey, developed by staff in the Office of Institutional Research and Reporting, was an eight-page survey that contained 93 questions on the following topics: overall assessment of quality and overall satisfaction levels; evaluation of specific campus services; evaluation of courses and instructors; campus experiences and time commitments; and plans and expectations. The response rate for the random sample of undergraduate students was 54.9 percent, and the response rate for seminar participants was 48.0 percent.

The relationship between participation in a first-year seminar and retention was investigated by using a logistic regression model to determine if seminar participation increased the probability of retention beyond that achieved by using the typical demographic variables of gender, ethnicity, and academic readiness. First-year college of enrollment also was used as predictor variables in the regression model.

Table 3 provides the definitions of the independent variables used in the study; the dependent variable is a discrete variable (i.e., 1 if the student was retained and 0 otherwise.) The dependent variable is modeled as a function of the set of independent variable, and is represented in the equation as the log of the odds that retention will occur. The logistic regression equation, similar to that used by Manski and Wise (1983) in studying college choice, is  $\log(P_i/1-P_i) = a + B_i X_i + e_i$ , where  $P_i$  is the probability that student will be retained and  $X_i$  is the vector of predictor variables including student satisfaction level. The model was estimated using a maximum-likelihood estimation procedure for logistic regression in SPSS. An Aldrich/Nelson pseudo R<sup>2</sup> was calculated to estimate the overall explanatory power of the model; the value is calculated by

dividing the Model c2 value by the number of cases in the sample plus the Model c2 value (Aldrich & Nelson, 1984).

### Results

Results of t-tests between the two groups of students indicated statistically significant differences at  $p \leq .05$  for 15 of the 92 items on the Student Experiences Survey. For all but one of the items, the more positive responses came from students enrolled in a first-year seminar. The two groups did not differ in their overall level of satisfaction with their first-year experiences; both groups had mean satisfaction levels above 5.0 on a six-point overall satisfaction scale. The differences most frequently occurred in items that asked students about academic advising (e.g., advisers help in helping me to get involved in campus life, overall quality of advising) or about their specific campus experiences (e.g., heard a faculty member discuss their research). The two groups did not differ in their responses to a set of questions about courses and instructors, including one question that was written specifically to address expected benefits of being in a first-year seminar (i.e., Instructors helped me understand the meaning of a university education). Students who were enrolled in a first-year seminar were more likely to indicate they had experienced a sense of community during their first year. The two groups did not differ in their evaluation of specific university services (e.g., registration and recreational sports

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Insert Table 4 about here

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On average, the students who enrolled in first-year seminars were slightly younger than students who did not participate (18.1 years of age versus 18.4 years). The two groups did not differ in either their overall grade point average for the first year (3.1 versus 3.0, respectively), or the total number of credits they completed during their first year (44.5 versus 44.6 credits, respectively).

A logistic regression analysis was conducted for approximately one-third ( $N = 1,733$ ) of the entering freshman class (i.e., those for whom survey data were solicited). Results of the logistic regression analysis indicated that only the high school rank variable was a significant contributor in the logistic regression equation. The model correctly classified 88.2 percent of the cases in the sample. The log odds ratios, which indicate the strength of the effect of the variables in the model, for the variables in the model were 2.158 and 1.565 respectively, for the two upper quartile high school rank categories. Participation in a first-year seminar was not a significant predictor of retention into the second year for the subset of students for whom survey data were available.

### Discussion and Conclusions

The results of this study provide importance empirical evidence of the effects of participating in a first-year seminar on retention into the second year. Results suggest that such participation had no direct effect on the satisfaction of first-year students and did not contribute to their retention into the second year, although it is possible that effects of the seminar will emerge in retention rates for subsequent years. Results did

indicate differences between seminar and non-seminar participants on 15 of the 92 items on the Student Experiences Survey, most notably several items focused on students' evaluation of academic advising. Moreover, students who enrolled in freshman seminars had experienced a greater sense of community during their first year, one of the objectives for offering freshman seminars at the study institution. Although the present study was based on approximately one-third of the entering freshman class, it is possible that different results might obtain if the entire population of non-freshman seminar participants had been included in the logistic regression analysis.

Findings such as those reported here add to the growing body of research literature on the effects of specific first-year initiatives designed to improve the quality of undergraduate education in colleges and universities across the United States.

**Table 1.**  
**Demographic and Educational Characteristics of fall 1998 New First-year Students**

Response	N	%	Mean	S.D.
<b>Gender</b>				
Female	2,494	48.3		
Male	2,672	51.7		
<b>Ethnicity</b>				
American Indian	39	.8		
Asian or Pacific America	450	9.0		
Asian African	212	4.2		
White Caucasian	4,106	82.2		
Chicano/Latino/Hispanic	131	2.6		
<b>High School Rank Percentile</b>				
75-79 Percentile	2,900	60.2	75.5	19.5
50-74 Percentile	1,332	60.2		
75-99 Percentile	557	11.6		
<b>ACT Composite</b>				
			24.6	4.1
<b>College of Enrollment</b>				
Agriculture, Food, EnvSci	174	3.4		
Biological Sciences	201	4.0		
Natural Resources	42	.8		
General College	971	19.1		
Human Ecology	85	1.7		
Technology	824	16.2		
Liberal Arts	2,603	51.2		
Management	266	5.2		
<b>Overall First Year GPA</b>				
<2.0		7.6	2.92	
2.00-2.49		15.6		
2.50-2.99		27.1		
3.00-3.49		31.1		
≥3.50		18.6		
<b>Participation in Freshman Seminar</b>				
Yes	723	14.0		
No	4,363	86.0		

**Table 2.**  
**Freshman-to-Sophomore Retention Rates for New Freshmen Entering Fall 1994 through Fall 1999**

Year	Total New Fall Freshmen	Percent Retained
Fall 1994	3,350	78.0
Fall 1995	4,293	80.1
Fall 1996	4,185	80.7
Fall 1997	4,458	83.6
Fall 1998	5,086	83.1
Fall 1999	5,195	82.9

**Table 3.**  
**Definitions of the Independent Variables in the Logistic Model**

Variable	Definition
GENDER	A dummy equal to 1 if the student is female
ETHNIC	A dummy equal to 1 if the student is White/Caucasian
High School Rank in Class	
RANKQ1	A dummy equal to 1 if the student is in top quartile (75-99)
RANKQ2	A dummy equal to 1 if student is in second quartile (50-74)
RANKQ3	A dummy equal to 1 if student is in bottom half (1-49)
First Year College	
COLSEL	A dummy equal to 1 if in biological science, management or technology
COLLAR	A dummy equal to 1 if liberal arts
COLSMA	A dummy equal to 1 if college is agriculture, human, or natural resources
COLGEN	A dummy equal to 1 if general college
FIRST YEAR SEMINAR	A dummy equal to 1 if the student participated in a first-year seminar

**Table 4.**  
**Differences between Students who Participated in a First-Year Seminar and a Random Sample of Non-participating First-Year Students**

Item	Group			<u>Seminar Participants</u>	<u>Non-participants</u>	t-value
	$\bar{X}$	SD	$\bar{X}$			
Overall quality of advising <sup>a</sup>	4.43	1.29	4.18	1.32	2.05*	
Adviser knowledge of degree requirements	4.52	1.20	4.27	1.28	2.17*	
Adviser help in career planning	4.17	1.35	3.88	1.38	2.23*	
Adviser's attitude to you	5.00	1.11	4.79	1.13	2.05*	
Adviser assistance in academic decisions	4.42	1.30	4.16	1.37	2.16*	
Adviser help in involving you in campus life	3.72	1.39	3.41	1.40	2.20*	
Faculty discussed research <sup>b</sup>	.76	.43	.64	.48	2.85**	
Participated in community service	.53	.50	.43	.50	2.27*	
Took class with international focus	.72	.45	.62	.49	2.23**	
Attended at least one special lecture	.56	.50	.42	.49	2.94**	
Attended at least one artistic event	.73	.44	.62	.49	2.60**	
Took course that required internet use	.93	.26	.85	.36	2.80**	
Heard faculty make sexist/racist remarks	.30	.46	.20	.40	2.51*	
Could not get accurate course information	.24	.43	.33	.47	2.13*	
Experience of sense of community <sup>c</sup>	3.34	1.12	3.05	1.21	2.69**	

<sup>a</sup>The advising questions were coded on a six-point scale from very poor = 1 to excellent = 6.

<sup>b</sup>The experience questions had a two-point scale with 0 = not experienced and 1 = experienced.

<sup>c</sup>This question had a five-point response scale coded from not at all = 1 to very greatly = 5.

\* $p \leq .05$

\*\* $p \leq .01$

**Table 5.**  
Logistic Regression Model Results

Variable	B	S.E.	Sig	Log Odds Ratio
GENDER	-.037	.159	.815	.963
ETHNICITY	.173	.418	.063	2.173
RANKQ1	.769	.251	.002	2.158
RANKQ2	.448	.192	.020	1.565
COLSEL	.776	.418	.063	2.173
COLLAR	-.795	.465	.087	.452
COLSMA	-.077	.456	.866	.926
FYSEM	.141	.211	.505	1.15
Constant	1.376	.201	.000	
<b>-2Log Likelihood (-2LL)</b>				
= 1220.752				

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